

***Bayou Texar Ground Water Quality Study
Scope of Work
SIS Site Number 758-1
March 2017***

***Florida Department of Environmental Protection
Site Investigation Section
David M. Phillips, Environmental Administrator
2600 Blair Stone Road
Tallahassee, Florida 32399-2400
(850) 245-8952***

Table of Contents

<u>Section</u>	<u>Page Number</u>
1.0 Introduction.....	1
2.0 SIS Scope of Work	1
2.1 Ground Water Sampling and Analytical Methods.....	3
3.0 Study Timeline	4

Table of Contents

Appendix

List of Figures

- 1 No Drill Area (NDA)
- 2 Irrigation and Monitor Well Locations

List of Tables

- 1 Monitor Well Construction Details

1.0 Introduction

The Site Investigation Section (SIS) of the Florida Department of Environmental Protection (DEP) has been requested to conduct a study evaluating ground water quality within a portion of the Sand and Gravel aquifer located adjacent to Bayou Texar in Pensacola Florida. In February 2001, the Northwest Florida Water Management District (NFWFMD) Board passed a moratorium on drilling new wells (No Drill Area, NDA), other than monitor wells or aquifer restoration wells, on or adjacent to, the former Escambia Treating Company (ETC) and Agrico industrial properties (*I*). Both these facilities have associated ground water contamination plumes that extend eastward from their properties towards Bayou Texar. *Figure 1* provides the location of the NDA and illustrates the approximate extent of both the Agrico and ETC ground water contaminant plumes. *Figure 1* also presents the location of approximately 70 irrigation wells which are either located within the NDA or immediately adjacent to it.

The goal of this study is to collect and analyze ground water samples from within the Sand and Gravel aquifer sufficient to determine the current condition of the NDA with respect to constituents of concern, and to provide analytical data that will assist others with determining an acceptable exposure risk within the NDA.

2.0 SIS Scope of Work

DEP has identified approximately 120 wells suitable for collecting water samples located within and approximate to the NDA. These wells consist of 53 monitor wells and approximately 70 irrigation wells. These wells are broadly distributed across the NDA

with some producing water from the surficial zone (SZ) while others are screened within the Sand and Gravel aquifer's main producing zone (MPZ).

Constituents of concern (COCs) associated with Agrico discharges within the NDA include radium 226 and 228, fluoride, arsenic, chloride, sulfate and nitrate; ETC COCs include volatile organic compounds (VOCs) such as benzene; and polycyclic aromatic hydrocarbons (PAHs) such as naphthalene (2). Chlorinated solvents related to dry cleaning facilities located within the NDA have also been identified in numerous ground water samples.

AECOM, the contractor representing Agrico, sampled twenty of these irrigation wells in 2001 with the Agrico COCs fluoride and radium 226/228 identified in some of these irrigation wells at concentrations exceeding their respective Ground Water Cleanup Target Levels (GCTLs) as presented in Table 1, Chapter 72-777 of the Florida Administrative Code (FAC).

DEP is in the process of requesting permission from the owners of the irrigation wells shown on *Figure 1* to collect a ground water sample from their well.

AECOM monitors ground water quality in the area through a network of 40 monitor wells. SIS has received permission to access the AECOM monitor well network and has selected 20 AECOM monitor wells to be included in this study.

The ETC facility also has a large network of monitor wells located within the NDA. SIS has requested access to 20 of these monitor wells.

SIS has also installed numerous monitor wells within the NDA to assess several dry cleaners; 13 of these monitor wells are included in this study.

Table 1 identifies and provides construction details for the 50 monitor wells selected for this study. *Figure 2* provides the locations of the irrigation and monitor wells included in this study.

2.1 Ground Water Sampling and Analytical Methods

Wells selected for this study will be purged and sampled using portable submersible pumps or the in-place submersible pump for irrigation wells until criteria set forth in DEP's Standard Operating Procedure for Ground Water Sampling (Field Sampling (FS) 2200) are met. The ground water parameters pH, temperature, specific conductance, dissolved oxygen and turbidity will be monitored and recorded as the well is purged.

Samples will be collected in appropriate containers, preserved when necessary, placed on ice and delivered under chain of custody to the DEP Central Laboratory in Tallahassee. The DEP Central Laboratory will perform the following analyses on the water samples: VOCs by EPA Method 8260C, semi-volatile organic compounds (SVOCs) by EPA Method 8270D, Radium 226 by EPA Method 903.0, Radium 228 by EPA Method 904.0, metals (arsenic, barium, cadmium, chromium, lead, selenium and silver) by EPA Method 6020A, and fluoride by Standard Method 4500 F-C-97. Purge water from monitor wells located in known areas of contamination will be containerized and disposed of properly after characterization.

3.0 Study Timeline

Sampling activities will commence the week of April 3, 2017 and continue through the end of April depending on laboratory capacity. The normal Priority Three turnaround time for analytical data is six to eight weeks.

A completed final SIS report will be provided to the DEP, EPA, NFWFMD, irrigation well owners and all other interested parties.

References

- 1.) AECOM, 2014 Annual Report Agrico Site Pensacola, Florida Operable Units One (OU-1) and Two (OU-2)
- 2.) CDM, 2004 Preliminary Data Summary Report For the Escambia Treating Company Site Operable Unit 2

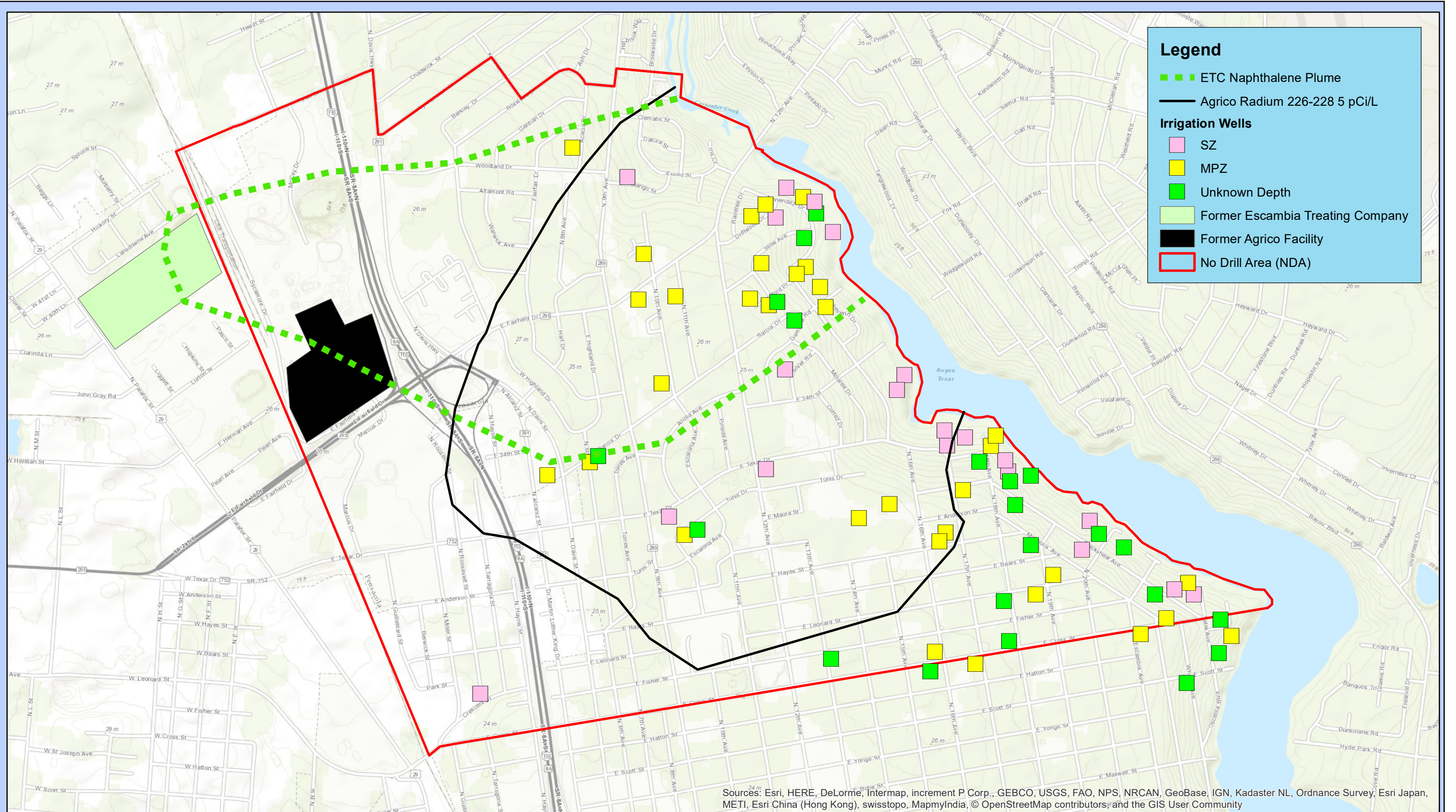
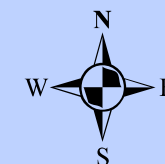
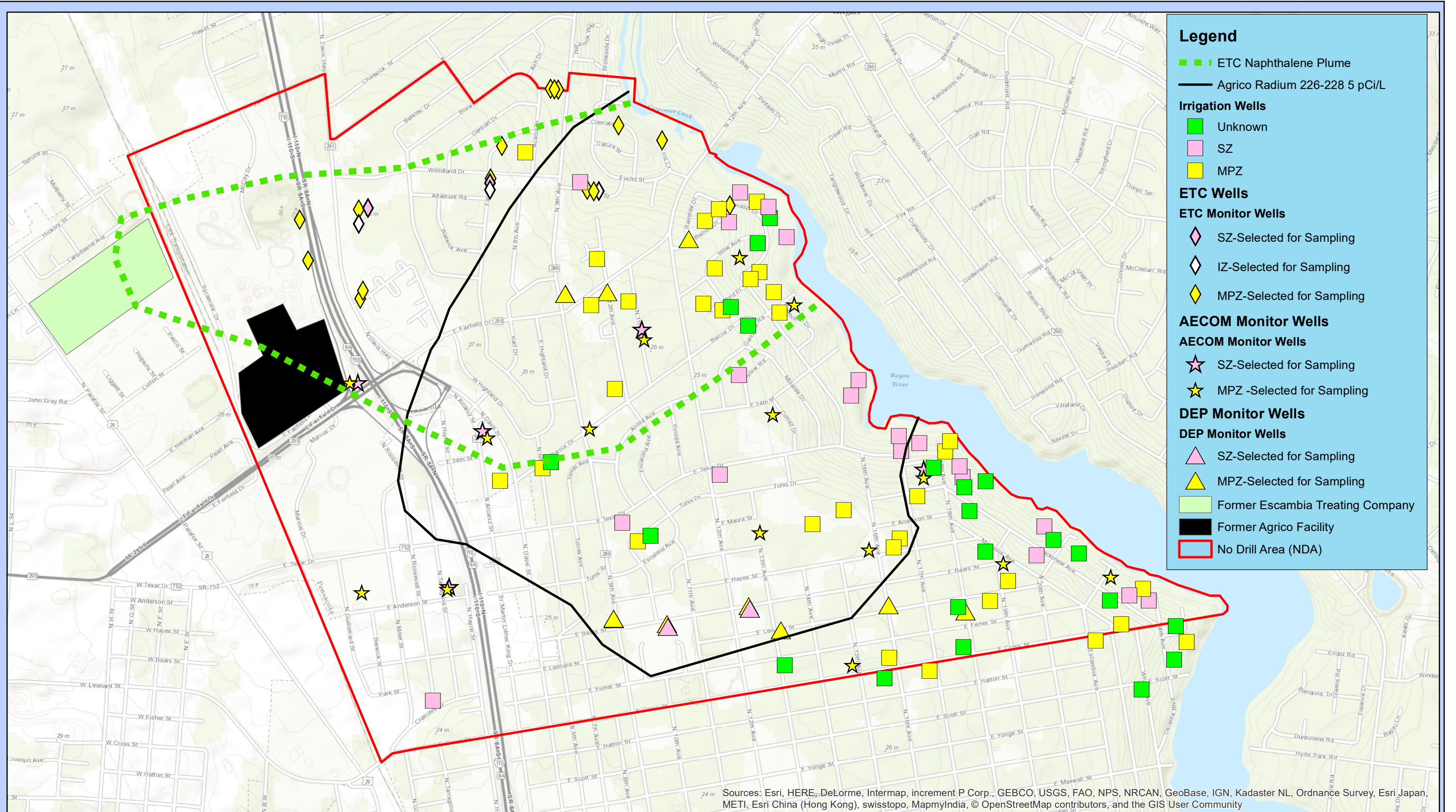


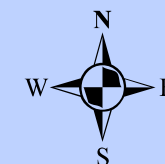
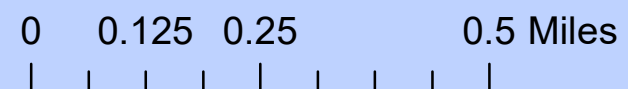
Figure 1: No Drill Area
Site # 758 Bayou Texar Ground Water Quality Study
Pensacola, Escambia County, Florida

0 0.125 0.25 0.5 Miles





**Figure 2: Irrigation and Monitor Well Locations
Site # 758 Bayou Texar Ground Water Quality Study
Pensacola, Escambia County, Florida**



**Table 1: Monitor Well Construction Details
Bayou Texar Ground Water Quality Study
Pensacola, Escambia County Florida**

Owner	Well ID	Depth (Ft.)	Screened Interval (Ft.)	Diameter (Inches)	TOC Elevation (Ft.)	Aquifer Zone
Agrico	AC-2S	70	50-70	4	88.65	SZ
	AC-2D	149	147.2-149	4	92.74	MPZ
	AC-3S	79	59-79	4	88.06	SZ
	AC-3D	170	150-170	4	88.07	MPZ
	AC-10D	224	190-224	4	79.48	MPZ
	AC-12D	211	191-211	4	79.23	MPZ
	AC-13D	223	203-223	4	74.65	MPZ
	AC-14D	199	179-199	4	49.79	MPZ
	AC-21D	170	160-169.5	4	75.47	MPZ
	AC-24S	80	70-80	4	79.50	SZ
	AC-24D	215	205-215	4	79.60	MPZ
	AC-25D	180	170-180	4	39.75	MPZ
	AC-26S	35	25-35	4	26.75	SZ
	AC-26D	165	155-165	4	26.70	MPZ
	AC-28D	201	181-201	4	74.89	MPZ
	AC-29D	211	191-211	4	82.26	MPZ
	AC-35D	145	125-145	4	10.49	MPZ
	AC-36D	152	132-152	4	5.26	MPZ
	NWD-2S	75	55-75	4	77.53	SZ
	NWD-2D	180	160-180	4	76.80	MPZ
Escambia Treating	MW-14S	70	60-70	2	81.63	SZ
	MW-14I	100	90-100	2	81.95	LPZ
	MW-14D	190	180-190	2	81.23	MPZ
	MW-15S	71	61-71	2	43.87	MPZ
	MW-15I	115	105-115	2	44.02	MPZ
	MW-15D	190	180-190	2	43.80	MPZ
	MW-16I	141	131-141	2	28.45	MPZ
	MW-16D	190	180-190	2	25.49	MPZ

**Table 1: Monitor Well Construction Details
Bayou Texar Ground Water Quality Study
Pensacola, Escambia County Florida**

Owner	Well ID	Depth (Ft.)	Screened Interval (Ft.)	Diameter (Inches)	TOC Elevation (Ft.)	Aquifer Zone
Escambia Treating	MW-18S				40.91	LPZ
	MW-18I	110	100-110	2	39.73	MPZ
	MW-18D	190	180-190	2	38.49	MPZ
	MW-21S	70	60-70	2	77.71	SZ/LPZ
	MW-21I	100	90-100	2	77.70	LPZ/MPZ
	MW-21D	158	148-158	2	77.55	MPZ
	MW-22I	70	60-70	2	88.56	MPZ
	MW-22D	201	191-201	2	88.51	MPZ
	MW-23D	198	188-198	2		MPZ
	MW-28D	155	145-154.6	2		MPZ
	MW-29D	141	129.7-139	2		MPZ
	MW-31R	126	116-126	2		MPZ
DEP	DEP-2S	70	60-70	2	78.50	SZ
	DEP-2D	147	137-147	2	78.55	MPZ
	DEP-3D	147	137-147	2	76.12	MPZ
	DEP-4D	147	137-147	2	58.76	MPZ
	DEP-5S	70	60-70	2	79.56	SZ
	DEP-5D	147	137-147	2	79.50	MPZ
	DEP-8D	147	137-147	2	73.41	MPZ
	DEP-11D	147	137-147	2	69.75	MPZ
	DEP-12S	70	60-70	2	NM	SZ
	DEP-12D	146	136-146	2	NM	MPZ
	DEP-13D	147	137-147	2	NM	MPZ
	DEP-14S	70	60-70	2	NM	SZ
DEP-14D	147	137-147	2	NM	MPZ	